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CS-Colloquium

Integrating spatial and non-spatial data in visualization

Prof. Helwig Hauser

University of Bergen, Norway

Wann? 14. Oktober 2015, 15:00 Uhr

Wo? Hörsaal 3
Währinger Straße 29
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Abstract

New opportunities in data science, such as the consideration of cohort study data, require new approaches to the appropriate design of an effective visualization. We need to capitalize on successful solutions from previous research, of course, but we should also explore new strategies that challenge our already established mindset in visualization. In this talk, I address the specific challenge of integrating spatial and non-spatial data in visualization, in particular, when the spatial aspect of the data is of great importance to the user---this could relate to the morphological information in a 3D medical scan or the geometrical aspects of flow features in a CFD simulation. In data visualization, the actual mapping step---from data to a visual form---is certainly crucial and we should strive to optimally exploit the great opportunities that we have in designing this step. In data-intensive sciences, the study objects of interest are increasingly often represented by extensive and rich datasets (aka. big data)---while traditionally the focus of visualization was on individual, static datasets, we now face dynamic data, representing entire ensembles of study entities, etc. Visualization gets a lot harder, when facing such new "big data" challenges---both on the designer side as well as also on the user side. At the same time, however, also the potential for impact is increasing, which amounts to a fantastic motivation for new basic research in visualization.

Bio

Helwig Hauser graduated in 1995 from Vienna University of Technology (TU Wien) in Austria. In 1998, he finished his PhD project on the visualization of complex dynamical systems (also at TU Wien). In 2003, he completed his Habilitation, also at TU Wien, with a thesis entitled "Generalizing Focus+Context Visualization" (in 2006, this work was awarded with the Heinz-Zemanek Award from OCG). In 2013, Helwig Hauser received the Dirk Bartz Prize for Visual Computing in Medicine from Eurographics for pioneering work in high-quality visualization of data from ultrasonography. Recently,



H. Hauser has been chairing several of the major conferences in visualization, including EuroVis 2011, PacificVis 2012, and IEEE InfoVis 2013 and 2014. He is member of the EuroVis Steering Committee and has served / is serving on the Editorial Boards of Computers & Graphics, Computer Graphics Forum, and IEEE Transactions on Visualization and Computer Graphics. After first working for TU Wien as assistant (since 1994) and later as an assistant professor, he then changed to the new VRVis Research Center in 2000. There, he led the basic research group on interactive visualization (until 2003) before he became the scientific director of VRVis (until 2007). Since then, 2007, he is a full professor in visualization at the University of Bergen in Norway, where he built up a new research group on visualization since.